NITED
ATIONS

A

General Assembly

Distr.
GENERAL

A/AC.105/PV.339
8 June 1990

ENGLISH

COMMITTEE ON THE PEACEFUL USES OF OUTER SPACE

VERBATIM RECORD OF THE THREE HUNDRED AND THIRTY-NINTH MEETING

Held at Headquarters, New York,
on Wednesday, 6 June 1990, at 10.30 a.m.

Chairman: Mr. JANKOWITSCH (Austria)

- Organization of work
- General exchange of views (continued)

This record is subject to correction.

Corrections should be submitted in one of the working languages, preferably in the same language as the text to which they refer. They should be set forth in a memorandum and also, if possible, incorporated in a copy of the record. They should be sent, within one week of the date of this document, to the Chief, Official Records Editing Section, Department of Conference Services, room DC2-750, 2 United Nations Plaza.

Any corrections to the records of the meetings of this session will be consolidated in a single corrigendum, to be issued shortly after the end of the session.

90-60575 8156V (E)

best copy available

The meeting was called to order at 10.50 a.m.

ORGANIZATION OF WORK

The CHAIRMAN: I should like to give the Committee some idea on how we shall proceed with our work over the next few days, so that members may be prepared accordingly. With regard to agenda item 3, "General exchange of views", there remain 15 speakers to be heard, and this might take us into the first part of this afternoon's meeting.

On the assumption that this afternoon's meeting will serve partly to conclude agenda item 3, we shall then proceed as follows. Immediately after the conclusion of deliberations on agenda item 3, there will be a technical presentation by the delegation of the Soviet Union. Following that presentation, the meeting will be adjourned and, as announced earlier, there will be informal consultations on the question of nuclear power sources in outer space. The three parts of the afternoon meeting will conclude today's work.

(The Chairman)

Then tomorrow morning at 10.30 a.m. we shall start consideration of agenda item 4, "Ways and means of maintaining outer space for peaceful purposes". That consideration will probably continue tomorrow afternoon.

Tomorrow morning and afternoon there will also be technical presentations by the delegations of the United States and France.

We may conclude our consideration of agenda item 4 tomorrow, which will enable us on Friday morning to start consideration of agenda item 5, "Report of the Scientific and Technical Sub-Committee on the work of its twenty-seventh session". We have usually combined that with consideration of agenda item 7, "Implementation of the recommendations of the Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space". If this plan works out, consideration of the two items together will begin on Friday morning. It is customarily opened by a statement by the Space Expert, Mr. Abiodun.

Another presentation, by the delegation of India, has been announced for Friday morning.

GENERAL EXCHANGE OF VIEWS (continued)

Mr. AHMAD (Pakistan): It is once again the privilege of the Pakistan delegation to join other speakers in expressing satisfaction at having you, Sir, presiding over the Committee at its thirty-third session. We are convinced that under your dynamic and able guidance the Committee will acquit itself well in playing its role - that of promoting international co-operation in outer space. The Committee is undoubtedly ably assisted by the Scientific and Technical Sub-Committee and the Legal Sub-Committee, working under the chairmanship of Professor Carver of Australia and Mr. Mikulka of Czechoslovakia respectively.

(Mr. Ahmad, Pakistan)

My delegation looks forward to substantial progress during the current session, and hopes that it will succeed in building upon the significant advance registered by the two Sub-Committees earlier this year.

This past year has witnessed a rapid pace of world-wide development in space science and technology. Some of the notable areas of progress, besides several successful launches of the space Shuttle, include the United States space programme, using the Jupiter probe, Galileo and the Hubble space telescope. During the past year the Soviet Union has launched a number of spacecraft, which include the solar-terrestrial physics experiment, AKTIVNY, a Czechoslovak scientific satellite for the study of Earth's magnetic field and ionosphere, and the SIGMA gamma ray telescope - a joint venture of France and the Soviet Union.

In the area of space technology, the docking of a new module, KVANT-2, with the Mir space station marked another milestone in the Soviet effort to build permanently manned missions. Other notable events include Japan's successful launch of several spacecraft, including the MUSES-A probe to the Moon and a second marine observation satellite, MOS-1b, to provide data on ocean circulation.

Arianespace has continued to provide international commercial launch services for a number of satellites, including the European Space Agency's OLYMPUS and the earth observation satellite of the Centre National d'Etudes Spatiales (CNES), SPOT-2.

Recently, with the launching of the communications satellite ASIASAT on a Long March 3 rocket, the People's Republic of China consolidated its status in the field of commercial launch services.

My delegation wishes to congratulate the countries with leading space programmes on the advances they have made during the past year, a few of which I have just mentioned.

READEX FICHE

(Mr. Ahmad, Pakistan)

For the developing countries, space technology is gradually gaining ground for use in economic and social development, particularly in communications, earth resource surveys and meteorology. Other applications of space technology of interest to developing countries include position mapping, search and rescue, data collection and relay, and radio monitoring of mobile platforms. The main emphasis of Pakistan's space programme has accordingly been in those areas. During the past year Pakistan's nascent programme of space technology development made a significant stride by completing the project of the first experimental satellite, BADR-A, on which pre-launch ground checks are currently being conducted at the Chinese Xichang Satellite Launch Centre. The piggyback launch of BADR-A on board the Chinese launch vehicle, Long March 2E, is scheduled for the last week of this month.

BADR-A is a low-cost experimental satellite weighing 50 kilograms. It will have a nominal apogee of 1,000 kilometres and a perigee of 200 kilometres, with an orbit inclination of 28.5 degrees. Two stations within Pakistan, one each at Karachi and Lahore, have been set up to track BADR-A and to conduct the planned communications experiments. The satellite, with an orbital period of 98 minutes, will pass over Pakistan's horizons for nearly three minutes only, but that will be sufficient to perform the planned experiments. The first experiment will comprise real-time voice communication, in which messages will be exchanged between the Karachi and the Lahore stations. The second will involve digital communication, in which information will be sent by one of the stations to the satellite, stored on it and later sent to the other station. Work on the design concept of a follow-on experimental satellite, BADR-B, has also started, and a final configuration will be chosen after the launching of BADR-A.

(Mr. Ahmad, Pakistan)

Pakistan has been engaged in satellite remote-sensing activities since 1973. Until recently the satellite remote-sensing data have been acquired from foreign ground stations on a limited scale. Realizing that a wide-ranging multi-disciplinary remote-sensing applications programme is dependent upon the regular and timely availability of satellite data, we have established a ground station within the country for direct acquisition and pre-processing of United States LANDSAT and French SPOT satellite data. The station, located in Islamabad, became fully operational in May 1989. The station was formally inaugurated by the Prime Minister of Pakistan in August 1989. The station has since produced a lot of valuable data which have been used by a number of agencies in Pakistan.

(Mr. Ahmad, Pakistan)

Other satellite applications programmes being pursued by Pakistan concern position mapping, search and rescue and collection of data from unattended platforms and its relay to a central station. Pakistan is participating in the Space System for Search for Vessels in Distress and the Search and Rescue Satellite (COSPAS-SARSAT) programme for which the equipment is being installed at the moment at Lahore. Similarly, the installation and commissioning of ARGOS platforms, which will serve to receive the environmental data from a number of unattended data-collection platforms located on the ground and in the sea, is in progress and will be completed shortly.

The training of scientists and engineers is an important component of Pakistan's space programme. To meet this need, an Aerospace Institute is being established at Islamabad, which will conduct post-graduate courses in various disciplines of space science and space technology leading to the award of a master's degree in philosophy in space science and a master's degree in space technology. The Institute is expected to start functioning by the end of 1991.

Turning now to the priority agenda item before the present session of the Committee, namely, "Ways and means of maintaining outer space for peaceful purposes", my delegation would reiterate once again the grave need for the immediate stoppage of all forms of the extension of the arms race in outer space. We firmly believe that the time has come for militarization activities to end. In order to bring this about, concerted efforts will have to be made by the developed countries in particular and the international community in general. Failure to do so will seriously affect international co-operation in the peaceful exploration and use of outer space and hamper the implementation of the recommendations of the Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE 82).

(Mr. Ahmad, Pakistan)

Relating to the agenda item on "Spin-off benefits of space technology: review of current status", my delegation appreciates the contributions made by the space-faring nations relating to this item at the last session of the Committee. The working papers submitted by the Soviet Union and the United States, which suggested ways of enhancing the sharing of information about the spin-off benefits of space technology to other Member States, were interesting. We hope that the discussions on this item at the present session will be useful in order to ensure that these benefits are also made available to the developing countries.

Referring to the United Nations Space Applications Programme, my delegation has noted the improvement in the scope of this programme in the form of short- and long-term training programmes, seminars and workshops. However, the programme has suffered owing to the United Nations shortage of funds. The Pakistan delegation stresses the need for generous voluntary contributions from all Member States to run the programme on a sound footing and further to enhance its scope. As the Committee is already aware, Pakistan has been making cash contributions to the Programme since 1984, and this year has contributed the modest amount of $12,000 as a token of its continued support for the Programme.

My delegation is pleased to mention that the Government of Pakistan organized a workshop on an oceanographic and marine space information system, in co-operation with the United Nations, the Indian Ocean Marine Affairs Co-operation and the United Nations Development Programme, for the benefit of the Indian Ocean region countries, at Karachi in July 1989. In the same month another symposium dealing with remote sensing applications for resource development and environmental management for the benefit of member countries of the Economic and Social Commission for Asia and the Pacific (ESCAP) was also held in Karachi, the event having been sponsored by Pakistan, ESCAP and some United Nations agencies.

(Mr. Ahmad, Pakistan)

In the area of satellite remote sensing, my delegation once again expresses its concern over the adverse impact of excessive commercialization of remote sensing services offered by the satellite operating countries, which tends to discourage the participation of developing countries in remote sensing programmes. We would also like to underscore the need for ensuring the continuity of space segment and compatibility of data format and other transmission characteristics between various remote sensing satellite systems so that the existing ground facilities on which considerable investment has been made are saved from premature obsolesence and the need of costly modifications. My delegation would further like to stress the point that the States or agencies operating remote sensing satellites have to bring down to a reasonable level the fees charged from the ground stations for access to and reception of data.

Turning to the agenda item concerning the use of nuclear power sources in outer space, my delegation has noted with satisfaction the progress made by the Scientific and Technical Sub-Committee and the Legal Sub-Committee at their last sessions. Consensus on the principle concerning the guidelines and criteria for the safe use of nuclear power sources in outer space is indeed, in our view, a notable achievement. My delegation now looks forward to a similar consensus on the text of other remaining matters through constructive debate next year.

On the subject of definition and delimitation of outer space, my delegation considers it rather disappointing that the Committee has not been able to arrive at a commonly agreed solution to the issue despite having had long and numerous debates on the subject for so many years. However, we appreciate the fact that this is a sensitive issue having a bearing on the perception of sovereignty of Member States. But that should not prevent the Committee from making an effort leading to decisive consideration of the matter.

(Mr. Ahmad, Pakistan)

Before concluding, my delegation would like to reaffirm its continued and wholehearted support of the efforts directed towards making progress in the work of this body.

Mr. JERKIC (Yugoslavia): I should like first of all to express my delegation's satisfaction at seeing you, Sir, presiding again over this important United Nations body. I am confident that the work of the Committee on the Peaceful Uses of Outer Space will, under your able and expert guidance, be efficient and successful this year as always.

Taking part in the general debate at this year's session, I should like to emphasize that my delegation is convinced that the importance of outer space and related activities is increasing every day. The new possibilities arising for its use, as well as the necessary technologies for utilizing its unforeseen potentials for the benefit of mankind all over the world - these are facts that cannot be denied. What we here in the United Nations should do is ensure that all activities in and around outer space be used exclusively for peaceful purposes and that all countries, irrespective of their level of development and material resources, have access to the benefits that might come our way from outer space.

The ongoing discussions, and your illustrative and instructive introductory statement, Sir, have revealed the impressive results achieved since the last session of the Committee on the Peaceful Uses of Outer Space. I am pleased to note that there is an increasing number of countries involved in these activities, especially the developing countries.

(Mr. Jerkic, Yugoslavia)

For a number of those countries, and not only for them, access to knowledge based on technology and information concerning outer space is often tantamount to prosperity and development. That is particularly true of information on meteorology, climate changes and, in general, the human environment. There is therefore no doubt in my mind that the first priority of our Committee, and our Organization as a whole, should be to ensure genuine co-operation based on a broad exchange of information on outer space.

One of the ways to proceed, certainly, is to master the new technologies and to train cadres for the relevant activities. We therefore attach particular importance to the training courses and seminars for cadres especially from developing countries.

Without wishing to repeat what has already been said in the substantive and constructive debate, let me make just a few brief comments regarding the reports of subsidiary organs of the main Committee. Those reports are eloquent proof of the significant progress made in certain areas of the work of the Scientific and Technical Sub-Committee and the Legal Sub-Committee, which give us cause to believe that the tasks still ahead of us will be carried out successfully as well.

The Scientific and Technical Sub-Committee reasserts the validity of the UNISPACE-82 recommendations, and draws attention to some of them. The importance of the safe use of nuclear power sources in outer space has also been pointed out. It is the view of my delegation that the work on the elaboration of principles of international security in this area should be accelerated. It is, however, encouraging that the Scientific and Technical Sub-Committee has completed the elaboration of scientific and technological criteria for the safe use of nuclear power sources in outer space.

(Mr. Jerkic, Yugoslavia)

We also attach great importance to the official theme for this year's session, the use of space technology in terrestrial search and rescue and in disaster relief activities.

As has already been pointed out, the Legal Sub-Committee continues its successful work on draft principles for the use of nuclear power sources in outer space, which this year was marked by an agreement on the consensus text regarding draft principle 3, on guidelines and criteria for the safe use of nuclear power sources.

We also attach importance to the fact that we continue discussion on an item that has been inscribed on the agenda only recently: consideration of legal aspects related to the application of the principle that the exploration and utilization of outer space should be carried out for the benefit and in the interest of all States, taking into particular account the needs of developing countries. The discussion so far shows it will not be an easy task, but my delegation is confident that it should be continued, without any effort being spared.

In conclusion I would point out that it is my delegation's opinion that the atmosphere of dialogue and co-operation that has been very much in evidence in international relations in recent times should be reflected also in the results of the work of this Committee. We therefore do not think it unrealistic to expect that the Committee on the Peaceful Uses of Outer Space should be involved and address itself with added vigour and resolve to finding a concerted position on individual issues that are important for the world as a whole and achieving certain results at this year's session.

Mr. ORDONEZ (Philippines): Mr. Chairman, the delegation of the Philippines is very pleased to see you once again presiding over the deliberations of the Committee on the Peaceful Uses of Outer Space. We are confident that with

(Mr. Ordonez, Philippines)

your effective leadership and experienced guidance the Committee will achieve satisfactory results. We extend our congratulations to the newly elected Vice-Chairman of the Committee, His Excellency Mr. Aurel Dragos Munteanu, Permanent Representative of Romania.

The Philippine delegation is grateful to you, Sir, for the comprehensive statement you made at the outset of the session on the outstanding developments relating to outer space, as well as on the work of the Committee. We also welcome the statement made by the Chief of the Outer Space Affairs Division, Mr. Jasentuliyana, on the work of the Division. We truly appreciate your insights concerning the changed political environment and in particular we are gratified by your observation that

> "The increase in East-West co-operation between developed countries ... must not be at the expense of North-South co-operation between developed and developing countries, but should provide the basis ... for increased global co-operation and increased concern for the welfare of all mankind."
> (A/AC.105/PV.336, p. 24)

This Committee's role is unique because it is the only international body to have the task of promoting co-operation in space exploration and utilization not only between space-faring nations but between space-faring and non-space-faring nations as well. The Committee has had many accomplishments in scientific, technical and legal areas, but its record in fostering genuine international co-operation between the space Powers and non-space Powers is below expectations. Space explorations and utilization remain the preserve of the space Powers, and this is reflected in the agenda and the issues before the Committee. My delegation holds the view that is high time for the Committee to devote its energy to the elaboration of legal norms and principles to ensure that the exploration and

(Mr. Ordonez, Philippines)

utilization of outer space be carried out for the benefit and in the interests of all States, taking into account particularly the needs of developing countries.

Many of the recommendations of UNISPACE-82 remain unimplemented. The Working Group of the Whole to Evaluate the Implementation of UNISPACE-82 has made many sound recommendations over the years. However, lack of financial resources, both domestically and internationally, hampers the attainment of goals set by the historic 1982 Conference. The Philippines in particular is convinced that the United Nations Space Applications Programme is central to developing and strengthening the space capabilities of developing countries. Political will to support and expand the Programme is required of the space Powers and non-space Powers.

The Philippines is in full agreement with the remarks of the Chairman in relation to the recommendations of the Working Group of the Whole that the reports and studies carried out provide a basis for progress in the implementation process only if the Committee and its member States are prepared to act on them. However, this presupposes that in the developing countries the necessary institutional structures are in place for such a decision-making process to occur. In many instances, trained personnel and institutional structures hardly exist to begin with. The importance, therefore, of the role of the Committee and the United Nations system to foster co-operation in space, however incremental, cannot be over-emphasized. In this connection my delegation commends the Outer Space Affairs Division for establishing the International Space Information Service. While the Service is still modest, we are hopeful that it will lead to improvement in the exchange of information concerning space applications to benefit developing countries.

My delegation notes that at its last session the General Assembly endorsed the recommendation of the Committee on the Peaceful Uses of Outer Space that

(Mr. Ordonez, Philippines)

international co-operation should be promoted through International Space Year, to be held in 1992. The Philippines also notes that the focus of proposed activities is the use of space technology to study and monitor the environment.

The Philippines is interested in a number of activities proposed by the Soviet Union and the United States, and we would appreciate receiving further information on those activities.

My delegation has followed with interest the deliberations in both the Scientific and Technical Sub-Committee and the Legal Sub-Committee. The question of remote-sensing has always been of major interest to my delegation, and we have made our views in that regard known at previous meetings. The Philippine delegation fully concurs with the Scientific and Technical Sub-Committee's view that remote-sensing from outer space should be carried out taking into account the need to provide appropriate and non-discriminatory assistance to meet the needs of developing countries in particular, given the paramount importance of satellite remote-sensing to monitoring and protecting the Earth's environment.

(Mr. Ordonez, Philippines)

My delegation welcomes the success of the Working Group on the Use of Nuclear Power Sources in Outer Space in completing the elaboration of scientific and technical criteria for the use of nuclear power sources in outer space. This welcome development augurs well for the work of the Legal Sub-Committee on this important issue.

Indeed, the positive developments in international relations directly benefit the deliberations on the substantive issues on our agenda. In the same vein, we hope that the issue of international co-operation in space exploration and utilization will benefit space-faring as well as non-space-faring nations during these extraordinary times.

Mr. BOYER (France) (interpretation from French): The French delegation wishes first of all to say how pleased it is, Sir, to see you once again in the Chair of the Committee on the Peaceful Uses of Outer Space. Once again we assure you of our readiness to co-operate to the utmost in the fulfilment of the important task entrusted to you. Our congratulations go also to the Vice-Chairman and Rapporteur. We once more extend our thanks to the Outer Space Affairs Division on its preparation and organization of this session.

This year we are holding the thirty-third session of the Committee, hence it has been in existence for a third of a century. That is already a long time, and this prompts us to ponder the whole question of space, its conquest, the uses to which it can be put and the rules governing it - in other words, its history and those who have made it.

Following the dream of reaching the Moon, nurtured by many generations, there began some 30 years ago the age of adventure in which bold men, supported and encouraged by the highly organized efforts of two great nations - the Soviet Union and the United States - launched into the unknown at the risk of their lives. They

(Mr. Boyer, France)

were truly the successors of that English climber of the Matterhorn who, when asked why he wished to climb such mountain peaks where no one had ever been, replied, "Because they are there".

Since change occurs very speedily in the twentieth century, after the first exploits came others with more sophisticated techniques. As these exploits broadened there came the sphere of applications.

Early on France realized how beneficial space could be for the whole of mankind and provided itself with the means to participate actively in efforts to explore and fully utilize space and through successive governments to maintain the choices made nearly 30 years ago.

France's efforts from the very beginning were openly oriented towards the rest of the world. Realism made this essential, and our philosophy of co-operation encouraged us to pursue this path. Thus we entered into agreements with the Soviet Union and the United States, our elders in space; we joined with our partners in the ambitious programmes of the European Space Agency; we count Japan among our associates; and with all countries, large and small, we have entered into undertakings of co-operation and developmental assistance, in response to the often different needs of the various countries.

While it is true that in France's view the conquest and utilization of space is a noble and beneficial undertaking, it is none the less essential to make sure that that undertaking goes forward in a controlled manner. Credit for having ensured at a very early stage that space did not become a bone of contention among States and for having drawn up a body of rules governing outer space activities belongs largely to this Committee, and through it to the United Nations. Success in this field was the outcome of wisdom and prudence which led the international community to enact provisions that were sufficiently precise to attain their

(Mr. Boyer, France)

purpose and flexible enough so as not to inhibit needlessly efforts made by any nation or group of nations in space. In this spirit the French delegation welcomes the results achieved this year through the work of the two Sub-Committees in the field of nuclear safety. Independent of its role in the elaboration of rules and recommendations, the United Nations and its competent bodies in this field can play an important role in disseminating throughout the world knowledge about space and space applications of all sorts.

In this regard we are pleased to note that the International Space Year appears in a particularly promising light in that it involves, in its harmonious preparation, the efforts of the international space community and of the United Nations. It is with lucid optimism, bearing in mind the difficulties of the entire gamut of the space adventure, that the French delegation is approaching the work of the Committee at its thirty-third session. The Committee can rest assured that we will contribute to that work a businesslike approach born of 30 years' experience, the enthusiasm that space arouses in us and our belief that any national effort made in the matter must be based on co-operation. The French delegation wishes to reaffirm its appreciation for the work done by the United Nations over the last 33 years and its determination to pursue the task.

Mr. CANDIOTI (Argentina) (interpretation from Spanish): I should like first of all to express my delegation's satisfaction at seeing you, Sir, once again presiding over the work of this Committee and to assure you of our wholehearted co-operation during your term of office. We wish also to extend our congratulations to Ambassador Aurel Dragos Muteanu on his recent election to the post of Vice-Chairman of the Committee.

A year ago in this same body we noted with cautious optimism signs of change in international life. Today we can state that that optimism has become a

(Mr. Candioti, Argentina)

certainty, that we are going through a period of unprecedented change in international relations. This will clearly have its impact in the multilateral field and can also work to the benefit of our task, namely, the peaceful uses of outer space.

This new international climate can permit the concentration of efforts and resources with a view to broadening space activities. However, we maintain that this should not merely result in benefits for countries that are in the vanguard of such activities but should also make possible and accelerate a greater role for the rest of mankind in this extremely promising field of endeavour.

(Mr. Candioti, Argentina)

The Argentine Republic has repeatedly affirmed the principle that outer space must be used exclusively for peaceful purposes and for the benefit of all mankind. It is therefore vitally important gradually to formulate an international legal régime adequate to govern space activities, taking into account the interests of all countries and in particular the needs of developing countries. Such a régime must foster international co-operation, research and the preservation of the exclusively peaceful nature of the exploration and use of outer space.

I wish now to comment on the concept of international co-operation in this field. That concept has evolved throughout the life of this Committee, although I dare say that many delegations here may differ in their understanding of its significance. Because of its specificity and complexity, space research is a field where international co-operation is essential. Unlike other technical or scientific activities, where self-sufficiency can seem advisable or necessary, space activities are intrinsically international and therefore have the ability to harmonize differing interests in the search for common objectives. Thus, international co-operation in this arena can be a tool for appropriate development for less well-endowed countries; it is clearly an inalienable right for such countries.

In that vein, my country considers that the concept of co-operation should include as an essential element the component of complementarity. We feel that international co-operation must both permit and encourage complementarity among space programmes and national technological development commensurate with the capacity and objectives of each country. In that way it is possible to optimize existing resources by applying the theory of comparative advantages. This will enable the great outer space adventure to include countries which are limited in their ability to engage in such efforts themselves.

(Mr. Candioti, Argentina)

Argentina considers that the United Nations can play a major role in encouraging greater co-operation and complementarity on the regional and subregional level, and to that end in facilitating appropriate regulatory frameworks and incentives.

Consistent with the conclusions of the conference on international co-operation in Latin America and the Caribbean organized in 1986 by the Outer Space Affairs Division and held in Cartagena de Indias, Colombia, my country signed a bilateral agreement in 1989 with the Federative Republic of Brazil, exclusively concerned with space matters. Both countries have set up a standing working group which has already begun its work on developing joint projects and monitoring their implementation. We feel that this kind of complementarity with respect to specific projects under development, to which any country can contribute, is a useful basis on which international co-operative efforts can be built.

The policy of complementarity and co-operation being pursued by Argentina would be impossible without the extensive understanding shown by the countries and agencies that are in the vanguard in this field, such as the National Aeronautics and Space Administration of the United States (NASA), the French National Centre for Space Studies, the Brazilian Institute of Space Research and the European Space Agency (ESA). We have reason to trust that several of these plans for co-operation will be realized in the near future, which would confirm the viability of this political approach. Evidence of this is a series of joint research projects conducted by the Argentine National Commission for Space Research and NASA.

Our work is not limited to co-operation with Brazil and the United States. For example, co-operation with Canada has made possible experiments in the field of remote education via satellite, at the university level, which builds upon a most fruitful bilateral relationship in this field.

(Mr. Candioti, Argentina)

There has been progress in our relationships with European countries as well. Long-standing co-operation with the space agencies of France and the Federal Republic of Germany has now been supplemented by relationships with public and private organizations in Spain and Italy, countries with which Argentina has particularly close links.

It is clear that many areas of space activities have entered the realm of commercial exploitation. Without prejudice to the concerns expressed yesterday by the representative of Indonesia - concerns we share - we feel it important to emphasize the significance Argentina attaches to participation by the private sector. In that connection, a fine example of that approach is the fact that the first Argentine satellite, Lusat, was designed and built by the private Argentine organization Amsat with support from various space agencies. Lusat was placed in orbit by an Ariane rocket in February 1990, at the same time as the successful launching of Spot II. This shows how rational complementary activities lend themselves to international co-operation better than preconceived projects which must be adapted to the requirements and needs of the various parties.

This account would not be complete if I failed to mention the commendable activities of the Latin America Organization of Experts in Remote Sensing, over which Argentina will be presiding during the period 1990-1991.

I wish now to comment on various items on the Committee's agenda.

Argentina knows the importance of using outer space for the development of all nations; we have therefore worked actively to preserve outer space for peaceful purposes exclusively. My delegation considers that all necessary steps must be taken to prevent an arms race in outer space. To that end it would be useful for the Committee to formulate methods and procedures for ensuring the peaceful use of outer space.

(Mr. Candioti, Argentina)

With respect to the work of the Scientific and Technical Sub-Committee, we wish to underscore the importance of the document on the implementation of the recommendations of the Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE 82) which can constitute a useful basis for future work.

(Mr. Candioti, Argentina)

As to the Legal Sub-Committee, we consider that much clearer progress has been made on the subject of principles relevant to the use of nuclear power sources in outer space. In that connection, we wish to commend the efficient work performed by the Chairman of the Group, Mr. Hans Winkler of Austria, which led to an agreement on principle 3 in Geneva.

The items relating to the definition and delimitation of outer space and to the character and utilization of the geostationary orbit continued to be carefully studied in the respective Working Groups. It became clear in those meetings that many delegations attach particular importance to those questions and to the need to persevere in the search for agreement.

We wish to emphasize the satisfaction at the setting-up of the Working Group to consider the legal aspects related to the application of the principle that the exploration and utilization of outer space should be carried out for the benefit and in the interests of all States, taking into particular account the needs of developing countries. That represented the concrete expression of an initiative dear to the countries of the Group of 77. Argentina is looking forward to an active and constructive participation in the work of the Group, under the skilled and experienced guidance of Mr. Raimundo González of Chile.

Lastly, I should like to refer to some matters concerning methods of work in the Committee and its subsidiary bodies. My delegation feels that the efficiency of our activities should not be measured solely in terms of statistics. That is particularly important in relation to the work of the Legal Sub-Committee, whose subject-matter requires time, careful consideration, and the possibility of holding informal consultations. We feel that an unduly rigid process would not merely entail procedural difficulties but could also be detrimental to matters of substance. We therefore prefer the adoption of flexible procedures that can be tailored to the requirements of each session.

Mr. KUKAN (Czechoslovakia): I should like at the outset to express the pleasure of my delegation at seeing you, Sir, presiding again this year over the work of the Committee on the Peaceful Uses of Outer Space. The high competence and great experience with which you have so successfully guided the deliberations of the Committee for years are a promise to us that the current session, too, will not be found wanting in meeting our expectations, and that it will bring satisfactory results.

I should also like cordially to congratulate Ambassador Aurel Dragos Munteanu, Permanent Representative of Romania, on his election as a Vice-Chairman of the Committee.

The world is at a stage of dramatic changes. Hopes for a turn for the better in all spheres of international relations are higher than ever before. It only adds to our great responsibility that we must not allow those chances to slip away. That is also true in the field of the peaceful uses of outer space. Where else, if not precisely in the exploration of outer space, should universal human interests, solidarity and the broadest possible co-operation be first and foremost?

Together with the Committee, we want to believe that the improving international atmosphere will also find positive expression in the work and results of the Committee's 1990 session. We also believe that that will hold true for the Committee's longstanding endeavours to develop peaceful exploration of outer space or, in other words, to preserve it exclusively for peaceful purposes in accordance with the provisions of one of the basic principles of the outer space Treaty. We are convinced that, through a fresh approach to the solution of practical questions surrounding the peaceful uses of outer space, the Committee and its Sub-Committees can significantly contribute to that goal.

In your introductory statement, Sir, you drew an impressive picture of the main events in overall space activities during the past year. That is proof of the

(Mr. Kukan, Czechoslovakia)

high dynamism of the development of space science and technology and their application. It demonstrates the ever-widening circle of States taking an active part in the exploration of outer space.

Though very far from comparing itself with the space Powers, Czechoslovakia can none the less produce practical results of its participation in space activities in a number of areas. As in preceding years, it was engaged mostly within the framework of the INTERCOSMOS programme. It participated in the projects of INTERBALL, devoted to the study of solar-terrestrial physics and the Earth ionosphere, and of CLUSTER-REGATTA, involving global studies of the magnetosphere with a network of satellites. It is also participating in the MARS-94 project, which is part of a long-term comprehensive programme of research of the planet Mars; the APEX project, modelling geophysical events in the near-Earth plasma, using active methods; and the CORONAS project focused on solar physics, a study of solar processes in the wide range of electromagnetic radiation during maximum solar activity.

The cited and other projects involving Czechoslovakia's participation are co-ordinated in the framework of a global co-operation of space agencies - the National Aeronautics and Space Administration of the United States (NASA), the European Space Agency (ESA), the Institute of Space and Aeronautical Sciences (ISAS), and INTERCOSMOS - by the Inter-Agency Consultative Group for Space Science (IACG), the ninth meeting of which was held in Prague in 1989.

A number of Czechoslovak research centres participated in the preparation of the scientific equipment of the INTERCOSMOS-24 satellite, which is an automatic general-purpose orbital platform oriented to the Earth that was launched on 28 September 1989. On 3 October 1989, MAGION-2, a Czechoslovak sub-satellite, was separated from INTERCOSMOS-24. That was at the beginning of the ACTIVNYI project designed for research of the plasma processes in the magnetosphere and ionosphere

(Mr. Kukan, Czechoslovakia)

of the Earth. The MAGION-24 satellite, developed and manufactured in Czechoslovakia, is the outcome of broad co-operation between a number of Czechoslovak research and development centres and organizations in the USSR and other countries participating in the project.

With the help of the Czechoslovak EFO-1 equipment aboard the Mir station, measurement was concluded in 1989 of the dust layer generated in the Earth's atmosphere as a result of meteor showers. The results of that measurement can be applied to the study of atmospheric turbulence in the approximate range of 40 kilometres from the surface and below.

(Mr. Kukan, Czechoslovakia)

The past year also brought a series of other achievements by Czechoslovak researchers. A project was concluded of a small satellite equipped with a microaccelerometer to measure non-gravitational influences on satellites in a free space orbit. Development continued of a device for the study of the solidification of melts, including that of the automated crystallizer CSK-3.

In the Czechoslovak centre for international preparation of space experiments preparation continued of a joint experiment by Czechoslovakia, Romania and the Soviet Union in developing monocrystals of a special quality. This technology is the subject of a joint Czechoslovak-Romanian patent.

In a final stage of development is the infrared spectrometer ISTOK-1, which is being prepared in co-operation by the Union of Soviet Socialist Republics, Poland, Romania and Czechoslovakia for a project of remote sensing of the Earth called "Priroda", which means "Nature". Czechoslovakia is developing the optomechanical component of the spectrometer.

In the field of space biology and medicine, Czechoslovakia participated in the preparation and implementation of the scientific programme for the 14-day flight of the biosatellite COSMOS-2044, which included experiments with monkeys on gravitational biology, radiobiology and radio physics as part of a broader study of the effects of space flights on biological systems. The PLAZMA-02 equipment, a Czechoslovak-made system, was used in the MINILAB experiment during the flight of the French cosmonaut to the Mir orbital station to study features of water/salt metabolism and its hormonal control during manned space flights. One of the instruments on the Mir orbital station is also the Czechoslovak-made INKUBATOR-2 device, developed for the purpose of the study of the questions of embryogenesis in outer space.

(Mr. Kukan, Czechoslovakia)

In the field of remote sensing of the Earth, Czechoslovakia has initiated and become the co-ordinator of a new project called EKOLOGIE, designed to explore changes in geosystems using the methods of remote sensing.

Czechoslovakia also organized international meetings of scientists last year. In the framework of the INTERCOSMOS programme, we hosted in Prague the international workshop on the study of wave processes by active methods. Under World Meteorological Organization (WMO) auspices, a seminar was held in Bratislava, with participants from 48 countries, on the topic "Monitoring and broadcasting methods for very short-term weather forecasts". Simultaneously, a working meeting of the WMO Governing Group on very short-term forecasting took place there.

Encouraged by the results achieved, we are ready to continue to share in the development of international co-operation in space activities in the future. Our modest contribution to this effect will be a course on remote-sensing applications organized by the Agricuture University of Prague and sponsored by the Food and Agriculture Organization of the United Nations (FAO), to take place this summer. It will focus on agriculture as well as on related spheres, such as forestry and water resources management.

Allow me now to mention briefly the results of the work of the Committee's two Sub-Committees.

The work of the twenty-seventh Scientific and Technical Sub-Committee session was successful. In particular, major progress was made this year in consideration of the item on the use of nuclear power sources (NPS) in outer space. The comprehensive set of recommendations on the safe use of NPS gave a good scientific and technical basis for the Legal Sub-Committee's consideration of the set of principles for the use of NPS in outer space.

(Mr. Kukan, Czechoslovakia)

A considerable part of the Scientific and Technical Sub-Committee's session was devoted to technical presentations and to a scientific symposium. My delegation welcomes this trend of increasing the highly scientific orientation of the session, but would like to see similar progress in the substantive work of the Sub-Committee in creating policy and guidelines for international co-operation in space activities. The growing concern among delegations over environmental issues, for example, indicates an internationally recognized field for such co-operation.

Among the results achieved by the Legal Sub-Committee at its session this year, the progress made in the work on the principles relevant to the use of nuclear power sources on board space objects deserves special mention. The agreement reached on principle 3 - "Guidelines and criteria for safe use" - is a concrete example of fruitful joint work by the Scientific and Technical Sub-Committee and the Legal Sub-Committee, facilitated by the results of the eighth meeting of the Working Group on Nuclear Power Sources, which was held in the course of the twenty-seventh session of the Scientific and Technical Sub-Committee. Indisputable credit in this context must be given to the delegations of Canada, the Federal Republic of Germany and France, whose draft paper facilitated the Committee's efforts to transform the results of the work of the Working Group of the Scientific and Technical Sub-Committee into a legal form, and also to the Chairman of the Working Group of the Legal Sub-Committee, Mr. Winkler of Austria, for perseverance and creativity in the search for a compromise.

In the light of the achievements already made in drafting the set of principles on nuclear power sources on board space objects, we are convinced that work on the whole set should be concluded in the near future. We are ready to play an active part to this end.

(Mr. Kukan, Czechoslovakia)

The lack of progress on the definition and delimitation of outer space, as well as on the question of the status and equitable use of the geostationary orbit, should be a good reason for the Legal Sub-Committee to attempt to take a new look at these problems, inspired by the present conditions, rid of old rivalries and motivated in a distinctly pragmatic manner.

A highly responsible task facing the Legal Sub-Committee at its future sessions is dealing with legal aspects of the principle according to which the exploration and use of outer space should be carried out for the benefit of all States. We welcome the new Working Group on this issue set up at the Legal Sub-Committee's last session, and wish its Chairman, Mr. Raimundo Gonzalez of Chile, much success in his responsible work. For our part, we wish to assure him of our readiness to engage constructively in the Group's work and in its result-oriented discussion.

Mr. JANUS (Netherlands): As this is the first time that my delegation has spoken at this session, I should like to say that we are glad to see you again in the Chair, and we assure you of our full support and co-operation during this session of the Committee.

My delegation would like to reiterate its view that one of the priority issues on the agenda of the Committee and its Sub-Committees is the use of nuclear power sources in outer space. We believe that the formulation of a set of principles relevant to the use of nuclear power sources in outer space is highly important. We also believe that such principles should have a sound technical and scientific basis. We note with appreciation that Canada has continued over the past year to play a leading role in this endeavour and assure it of our continuing support for its efforts.

My delegation welcomes the progress that has been made in this area, particularly with regard to the central principle 3, relating to guidelines and criteria for safe use, which was unanimously agreed to at the twenty-ninth session of the Legal Sub-Committee. However, more work is still to be done in both Sub-Committees before agreement is reached on all principles. It is to be hoped that we are approaching the point where a complete set of principles will be adopted by consensus.

My delegation has pointed out on many occasions in the past its view that it is important to improve the working methods of the Committee. In the view of my delegation, this could be done by reducing the duration of its sessions where possible, by avoiding automatic repetition of agenda items, and by removing items from the agenda that belong rather in other forums and focus our attention on items like nuclear power sources for which there is the prospect of real progress.

(Mr. Janus, Netherlands)

In your opening statement, Sir, you referred at some length to the problem of space debris. We fully share the concerns you expressed. Space debris has become a serious threat to man's exploration and utilization of outer space. Various studies have been undertaken at both the national and the international level that prove this point. Therefore, we feel that the problem of space debris warrants urgent action - action to improve our understanding of the problem, besides action to minimize risks by preventing a further accumulation of debris and introducing changes in the design and operational practice of spacecraft in order to avoid collisions.

My delegation senses a growing awareness of the problem of space debris in the international community. A reflection of this may be that last year for the first time this issue was addressed in the General Assembly resolution on international co-operation in the peaceful uses of outer space. The resolution states that:

> "it is essential that Member States pay more attention to the problem of collisions with space debris and other aspects of space debris, and calls for the continuation of national research on that question". (resolution 44/46, para. 23)

My delegation feels that this item also belongs on the agenda of this Committee.

Mr. OBAKPOLOR (Nigeria): Sir, I wish to join earlier speakers by expressing the delight of the Nigerian delegation at seeing you presiding once again over the affairs of the Committee on the Peaceful Uses of Outer Space this time at its thirty-third session, and I wish you success in the task ahead.

My delegation is very much aware of General Assembly resolution 1472 (XIV) adopted in 1959, just when it became apparent that outer space was becoming the next frontier of human activity. It needs no repeating that its main purpose was for this Committee to become the focal point for multilateral discussions on space

(Mr. Obakpolor, Nigeria)

science and technology, to ensure that outer space would be used exclusively for peaceful purposes and that the benefits derived from space activities would advance the interests of all nations.

We can now look back and see how far the Committee has met those expectations over the years in making outer space the genuine province of mankind, besides bringing the dividends of the vast scientific and technological developments to the doorsteps of all nations, particularly the developing nations. We are still far from realizing these objectives. Hence, the General Assembly, in resolution 44/46, paragraph 26, of 8 December 1989, requests the Committee to continue the consideration of agenda item 4, as a matter of priority, on the "Ways and means of maintaining outer space for peaceful purposes", in addition to the continued inclusion in our work at this session of agenda item 8, "Spin-off benefits of space technology: review of current status".

My delegation is conscious of the achievements already made by the Committee and its two Sub-Committees over the years in various spheres. We are also mindful of the Committee's systematic approach in fostering a better understanding between the developed and the developing nations. In particular, agenda item 7, "Implementation of the recommendations of the Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space", has continued to sustain our hope in the potentialities that abound in the multilateral co-operation it espouses.

The efforts of the Scientific and Technical Sub-Committee in reviewing the Space Applications Programme and its activities for 1989 and 1990, the recommendation for approval of the proposed activities for 1991, in addition to the co-ordination of space activities within the United Nations system, constitute a clear manifestation that, given the necessary political will of Member States, the United Nations can indeed play a decisive role in securing outer space for peaceful

(Mr. Obakpolor, Nigeria)

purposes for the benefit of mankind. We commend the efforts and the sincerity of purpose of the Outer Space Affairs Division of the United Nations over the years in this regard.

The report of the twenty-seventh session of the Scientific and Technical Sub-Committee (A/AC.105/456) of 12 March, and the report of the twenty-ninth session of the Legal Sub-Committee (A/AC.105/457) of 2 May 1990, both demonstrate the present-day realities and the task ahead in meeting the challenges posed by the scientific and technological advancement in outer space exploration, besides the need to respond with appropriate measures and additional legal steps to correspond with these development stages. The question of remote sensing of the Earth by satellite, including application for developing countries, and the use of nuclear power sources in outer space, both represent a great scientific achievement, on the one hand, and, at the same time, are issues capable of dire consequences for the security and environmental interests of many States, if not properly handled, especially for those without appropriate technology.

The question of the definition and delimitation of outer space and the character and utilization of the geostationary orbit, including consideration of ways and means of ensuring the rational and equitable use of the geostationary orbit, without prejudice to the role of the International Telecommunication Union, are considerations that are of much interest to many States, given their views about the peaceful nature of space exploration in contrast to the type of activities being undertaken by some spy satellites and military-oriented spacecraft. My delegation's views have already been clearly stated on these issues through our past statements in the Committee. We thus need not emphasize the fact that we must concentrate our attention on, and give due seriousness to, the issues of safe criteria for the design and use of nuclear power sources: equitable access

(Mr. Obakpolor, Nigeria)

to and rational utilization of the geostationary orbit; the definition and delimitation of outer space to guarantee a legal régime on air space sovereign, security rights, especially of vulnerable non-space nations.

The Nigerian delegation believes that as the new frontier of human activities, outer space should be maintained only for peaceful purposes. To achieve this end, we must devise a way whereby it is ensured that all nations, irrespective of their level of economic and technological development, have a stake in the peaceful exploration of, and activities in, outer space. We cannot afford to start another arms race, or other hostile activities, in outer space, as this would run counter to the aims and aspirations of the international community.

(Mr. Obakpolor, Nigeria)

My delegation therefore believes that viable, peaceful international activities must be devised, broadened and vigorously pursued at the multilateral, regional and bilateral levels to consolidate these objectives. Available adequate resources for development assistance, especially to the developing nations, and sufficient contributions to the Outer Space Affairs Division are vital ingredients for the promotion of necessary technical programmes and educational opportunities, which, among other things, can contribute immensely to better multilateral co-operation in space matters.

With regard to the United Nations Programme on Space Applications and Co-ordination, my delegation would like to express its concern as to the financial difficulties in implementing the programme. We have, on our own, made special contributions in the past when the need has arisen. Therefore we should like to appeal to all countries and international organizations to increase their voluntary contributions, with particular attention being given to the needs and interests of developing countries.

Because remote-sensing satellites have an inherent capability to cover the entire Earth, it is clear that the question of international co-operation in the acquisition and dissemination of satellite data will arise. Irrespective of benefits derived, we believe that international co-operation should be enhanced and the confidence of States sustained in outer-space exploration through the free availability of information gathered on the sensed States for their social, economic and other development. In pursuance of the generally improving international relations, an agreement was reached in 1986 whereby this Committee and the General Assembly approved a set of principles relating to remote sensing of the Earth from space. Among a variety of principles encouraging international co-operation in remote sensing, the most important aspect of the agreement was that

(Mr. Obakpolor, Nigeria)

no limitations were to be placed on the collection of remote-sensing data, and that any data collected by one country over another had to be made available to the sensed country on a non-discriminatory basis and on reasonable cost terms.

Four years later, we can evaluate to what extent this Committee has met that expectation in making remote-sensing benefits available to mankind as well as bringing the dividends of the vast scientific and technological developments to the doorsteps of all nations at reasonable cost terms, particularly in favour of the developing nations. That we are still far from that realization is, to my delegation, part of the rationale for the General Assembly's assigning, in paragraph 8 (a) (iii) of its resolution 44/46 of 8 December 1989, priority consideration to a subject covered by our agenda item 5, on the report of the Scientific and Technical Sub-Committee on the work of its twenty-seventh session: "Matters relating to remote sensing of the Earth by satellite, including applications for developing countries".

By enabling the developing countries to benefit directly and fully from the use of remote sensing, international co-operation will invariably replace the current perception of opportunism and remote-sensing brigandage - which commercialization of sensed activities tends to imply - on the part of the sensing developed States.

Sharing technologies, experiences and information in this connection would then promote the goals and objectives of remote sensing. The current prices for remote-sensing data pose major difficulties for users in developing countries, both because of the magnitude of the prices and because of the difficulties in obtaining necessary foreign exchange, factors that severely limit the applications of remote sensing in many countries, particularly the developing ones.

(Mr. Obakpolor, Nigeria)

As a developing country, we face the formidable challenge of maintaining sustainable growth and development while acknowledging planet Earth and its surroundings. The world of today is, and that of tomorrow will certainly be, different from the world of yesterday. The tremendous advances in science and technology make it almost possible to predict the future. Certain issues and trends have emerged, including the population explosion; the degradation of our living environment; the diminishing environmental protection, and the rise of human aspirations - to name but a few. My delegation also believes that the safety of spacecraft and the nuclear power sources they have on board are intrinsically linked with the peaceful utilization of outer space. However, we observe that the meaning and interpretation of the phrase "peaceful uses of outer space" has changed substantially. It is now more Earth-oriented.

Turning to this important area of concern, in the past Nigeria has in two Sub-Committees of the Committee on the Peaceful Uses of Outer Space enunciated its position that standard procedures in various stages of spacecraft design and launches should conform with generally accepted international guidelines for radiological protection of the environment. There is no gainsaying that outer space could be damaged by pollution and contamination by space debris, apart from interference with communications. These are serious problems that may lead to irreversible damage to our living environment. We also know that developing nations do not have the essential infrastructure to be able to cope with substantial environmental problems; nor do they have the relevant technological capability to carry out initial and immediate clean-up activities or the evacuation of population in case of radioactive fall-out from nuclear power sources. We thus consider it appropriate to demand minimum exposure to radiation arising from possible accident situations in space launches. Nigeria is keenly interested in

(Mr. Obakpolor, Nigeria)

preventing radioactive contamination of the human environment, and outer space in general. We believe it is high time that proper attention were focused on this increasingly serious threat to the safe exploration of outer space and its possible consequences for environmental pollution through collision with disintegrating space objects, their impact on land, and the resulting radioactive fall-out.

It is clearly evident that the peaceful uses of outer space have increasingly become more Earth-oriented. Space science and technology today provide vast opportunities and potential for transforming our knowledge not only about our environment but also about ourselves. The attention that has been paid to space communications, Earth observation and remote sensing has led us to a better understanding of the complex dynamics of atmospheric and ocean movement, and has also prepared us against possible harmful global climatological changes. The life sciences and medicine, planetary exploration and astronomy, among other factors, have continued to revolutionize life on Earth, giving better perspectives on the future in many fields. In this context my delegation welcomes the Sub-Committee's theme for 1990, which, in accordance with General Assembly resolution 44/46, places recognition on the use of space technology in terrestrial search and rescue and in disaster relief activities in relation to the application of airborne and satellite remote sensing for prospecting mineral and groundwater resources and monitoring and managing biological resources with emphasis on agriculture, taking into particular account the needs of the developing countries.

The progress of knowledge in space science and technology has proved its benefits for mankind. The review of the current status of spin-off benefits of space technology under item 8 of the agenda is clear testimony to the Committee's commitment to ensuring the even distribution of outer-space dividends to all nations. If activities in outer space are truly to be earmarked for the

(Mr. Obakpolor, Nigeria)

advancement of all nations, then the developing countries must also be consciously brought into the mainstream of progress and the discoveries of the technologically advanced nations in space activities.

At this juncture I would congratulate Mr. Gonzalez of Chile on his election as Chairman of the Working Group on this new item.

(Mr. Obakpolor, Nigeria)

The work of this Committee must be intensified to strengthen further the Space Applications Programme at various levels, so as gradually to bridge the gap in space science and technology between the developed space Powers and the developing non-space nations.

My delegation will of course dwell more specifically on some of these issues when they come up for consideration later in the session.

Mr. LOWELL (United States of America): Allow me, Sir, to express the United States delegation's satisfaction at seeing you presiding again over our deliberations.

We want to make just a few brief observations about our business at this session of the Committee, and I would like to do so by using as a point of departure the note of optimism that you, yourself, sounded, Mr. Chairman, in your opening remarks on Monday- a sense of optimism which, incidentally, we share. Certainly, as prospects for East-West co-operation improve in various fields, the potential to broaden and deepen co-operation by all nations in outer space activites can only expand. We have already seen some notable indications of this potential in the 1990 work of the two Sub-Committees, particularly so in the case of the Scientific and Technical Sub-Committee where productive discussions explored a number of important issues. Perhaps the most promising of those discussions concern preparations for the International Space Year, in 1992, and the further development of the international search and rescue satellite system, known as COSPAS-SARSAT. These kinds of discussions, together with the very useful scientific presentations recorded in the Secretariat's report (A/AC.105/459), reinforce our view that this Committee has indeed been on the right track in recent years in seeking to strengthen the scientific and technical underpinnings of its business and to reorient its discussions away from extraneous and frequently divisive issues for which it plainly has no mandate, such as disarmament.

(Mr. Lowell, United States)

One indication of the success of this effort is the growing relevance of our Committee's work to the international community in general, as reflected in part by the steady increase over the past few years in the number of other intergovernmental organizations as well as non-governmental organizations that seek participation in the Committee's work. As we have already heard from the Secretary of the Committee, two more non-governmental organizations have asked for observer status at this session. We look forward to considering those requests under agenda item 9 and the general point raised by the Committee's Secretary - with which we agree - on the desirability of developing guidelines for reviewing such requests. Clearly we should look for all appropriate opportunities at this session to further the revitalization of the Committee while remaining cognizant of the well-established division of labour between this Committee and the Conference on Disarmament, a division of labour which of course dates from General Assembly resolution 1348 (XIII), the so-called twenty-Power resolution, first establishing terms of reference of this Committee in 1958.

There are tangible opportunities at this session to enhance international co-operation, in keeping with the Committee's mandate as the only standing committee of the General Assembly with an exclusive mandate for co-operation in the peaceful uses of outer space. One such candidate is International Space Year. We now have clear direction from the General Assembly, in resolution 44/46, that defines a potentially significant role for the Space Applications Programme in the field of education and training. Let us proceed to fulfil this mandate. Another candidate of clear international benefit is the COSPAS-SARSAT programme, which has already saved more than 1,500 lives around the world. Let us consider what the Committee could properly do to encourage even greater international co-operation in this undertaking.

(Mr. Lowell, United States)

A third candidate concerns the growing relevance of interregional co-operation. We have already heard reference in our discussions to the very successful international conference, the Conference of the Americas on Space Co-operation, held in San José, Costa Rica, last March. This subject figures prominantly in the report of the Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space, the UNISPACE 82 report. It is one we have been trying for several years to develop in the Scientific and Technical Sub-Committee's working group of the whole and it is one in which the Committee's Secretary has indicated that the Outer Space Affairs Division will remain engaged and follow up. Let us discuss how the Committee itself can engage in and lend appropriate encouragement to this very interesting and important multilateral effort.

Yet another area of tremendous importance - which you, Sir, have also touched upon in your opening remarks - concerns the thirtieth anniversary we are comemorating this year of the first weather satellite, the TIROS I, launched by the United States Government in 1960.

By the same measure we feel the current session of the Committee could also provide a unique opportunity to remedy some rather longstanding problems that have obstructed progress, such as the venue and duration of the Legal Sub-Committee. We note that these items received unprecedented attention at the most recent session of the General Assembly. Thanks to the well-established conditions of co-operation and consensus we had a very salutary and balanced recommendation emerge from the Special Political Committee's working group on outer space dealing with the conservation of scarce conference services resources. A separate injunction we need to address at this session dealing with the Sub-Committee's venue is contained in General Assembly resolution 44/201 B, developed in the Fifth Committee. We are

(Mr. Lowell, United States)

prepared to work with all delegations at this session to provide a constructive response to the concern raised by the General Assembly in these areas.

Similarly we think there should be some movement at this session towards a solution to another perennial problem, that of the working methods best suited to advancing the business of this Committee. We are in complete agreement with the view expressed earlier by the representative of Japan on the desirability of establishing a working group to consider this problem.

During the current session we will propose specific ideas in the areas on which I have just touched, along with other items of business on our agenda. We will also be reporting at appropriate stages in our session on developments in the United States space programme that have significant interest, including the launch in April of the Hubble space telescope and the much anticipated launch later this year of the Ulysses mission to the planet Jupiter. Also, at the conclusion of the morning session on 7 June, senior officials of the Earth Observation Satellite Company (EOSAT) will make a special presentation on the LANDSAT programme. On 11 June, a senior official of the United States National Oceanic and Atmospheric Administration will provide a special presentation on the thirtieth anniversary of the weather satellite launch; and under agenda item 8 we will have with us again a senior official of the National Aeronautics and Space Administration of the United States to review in detail the latest in important technology spin-offs from the United States space programme.

Before concluding I wanted to make just a brief observation on some of the comments we heard in the general exchange of views expressing concern about commercialization. I just wanted to raise the general proposition that, far from being concerned about the need to restrict and further regulate commercial private investment in outer space activities, what this Committee could usefully do to encourage such benefits is to discuss ways to create the most favourable

(Mr. Lowell, United States)

environment for private sector involvement in outer space. While I certainly understand the concerns expressed by the developing countries on commercialization from their perspective, I would also invite them to think about how beneficial involvement by the private sector has been in the communications satellite industry, which I think it is fair to say accounts for about 90 per cent of all space applications these days and links all our countries through international systems like INTELSAT with world telecommunications circuits. All these institutions, both international and private, have to operate on a commercial investment, and we at least feel that this kind of private sector involvement, this ability to attract private investment is going to be the key to the future development on the applications side of outer space activities.

(Mr. Lowell, United States)

I think the history of space exploration so far, at least in the applications area, will bear this out. That is one of the reasons why we have strongly supported the discussion of the new item in the Legal Sub-Committee. We certainly do not agree that there needs to be any adjustment to the existing legal framework, but I think that there is a badly-felt need for dialogue and understanding and a general exchange of views on how the current framework has operated up to now and on how people would expect it to operate in the future. I think that kind of explication in the Legal Sub-Committee will certainly go a long way in this Committee to establishing a good atmosphere and furthering our work across the board.

Mr. PERRI (Brazil): Let me first express the satisfaction of my delegation at seeing you, Sir, presiding over the work of this Committee once again. We are certain that, as usual, your firm and competent guidance will enable us to hold another productive session this year.

It is also with pleasure that I mention the successful results attained during this year's sessions of the Sub-Committees of the outer space Committee. Those accomplishments were due to the spirit of compromise and mutual understanding that prevailed in the discussions in both Sub-Committees, as well as to the contribution of Professor John H. Carver and Mr. Vaclav Mikulka.

I should like to add our recognition of the productive activities of the Outer Space Affairs Division, under the direction of Mr. Jasentuliyana, and of the important courses, seminars and workshops on space sciences which have been proposed and organized by the United Nations Programme on Space Applications, under the firm guidance of Mr. Adigun Ade Abiodun.

The growing importance to mankind of the exploration and use of outer space reminds us not only of the need to extend the benefits of space science and technology to all countries but also of the urgent necessity to ensure that

(Mr. Perri, Brazil)

developing nations have the indispensable conditions to enable them to be more than mere consumers of products created by space science and technology. For space to become truly the province of mankind, to use the phrase of article I of the 1967 outer space Treaty, we have to extend to all nations the non-discriminatory option of developing their space programmes nationally and in co-operation with one another so as to give them real access to space. In addition to the most essential question of guaranteeing the non-military use of outer space as an objective to which we must all be committed, those are central issues related to the development of ways and means of maintaining outer space for peaceful purposes.

As delegations will recall, the central concepts of the 1967 outer space Treaty - the statement that the exploration and use of outer space should be for the benefit and in the interest of all nations and the principle that space is the common province of mankind - are closely related to the idea that all countries should participate in the conquest of this new frontier.

It is the enlargement of the number of countries participating in this process that will guarantee that no particular State or group of nations will take unwarranted advantage of its technological lead to impose conditions or restrictions to the detriment of others. Peace, as wisely perceived by those who drafted that fundamental instrument, is related to freedom of information and knowledge, to active dialogue between developed and developing countries and to association and co-operation among States.

Unfortunately, recent restrictions on the very concept of co-operation resulting from discriminatory regulations on the flow of technical expertise, from difficulties created in the acquisition of equipment related to space activities and from barriers against the dissemination of knowledge are examples of practices which run counter to the agreed recommendations of the 1982 United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE 82), which

(Mr. Perri, Brazil)

emphasized the commitment of all States to strengthening international co-operation in space activities.

Co-operation in space sciences and technologies and in their applications transcends the simple goal of fostering technical abilities, since it certainly serves as a practical way to guarantee the peaceful use of outer space. Co-operation must be perceived in its concrete form as a way to give other countries the option of developing their own capabilities in the entire range of space activities, such as designing, building, launching and operating national satellites.

One important element in the discussion of item 5 of the agenda relates to the question of the implementation of the recommendations of UNISPACE 82, particularly with regard to the role of the United Nations Programme on Space Applications. Brazil regrets that the financial resources available to the Programme on Space Applications have remained at the same level for the past 10 years and that the main obstacle to promoting multilateral co-operation in outer space in response to the needs of Member States continues to be the budgetary and technical constraints faced by the Outer Space Affairs Division. It is also with disappointment that we observe that, as a general rule, the contributions made to the Programme on Space Applications are inversely proportionate to the level of technological capacity and the economic might of States. Those countries which should contribute most to the goal of narrowing the gap between developed and developing nations are precisely those whose financial contributions to the Programme are less significant, if not at all negligible. In that sense, we entirely agree with the Chairman of the Committee who, in his opening statement, urged member States and other donors strongly to support the efforts to strengthen the Programme's funding and increasing activities. That is the essential mechanism by which to foster multilateralism and co-operation in outer space.

(Mr. Perri, Brazil)

Brazil, even though a developing nation facing economic restraints, has again extended its contribution of 10 fellowships for the 1991 seminar on remote sensing technology to be held by the Brazilian National Institute of Space Research (INPE). Moreover, it will promote, during the second semester of the current year, in collaboration with the Outer Space Affairs Division and with the European Space Agency, a seminar on microwave technology applied to remote sensing to be held at INPE's headquarters in Sao Jose dos Campos. Brazil is also taking the lead in accepting a co-ordinating role in the forest cover issue to be studied and analysed in the context of the programmes of the International Space Year.

My delegation wishes to congratulate the Working Group on the Use of Nuclear Power Sources in Outer Space for its positive deliberations and its agreement on the scientific and technical criteria for safe use of nuclear power sources in space. The recommendation that the use of nuclear power sources in outer space should be restricted only to those space missions which could not be operated by non-nuclear power sources in an effective manner, and the definition of technical guidelines on the design goals for radiation protection, on the concept of nuclear reactors and on the ideal characteristics of isotope generators may be considered substantial progress.

While recognizing that the elaboration by both the Scientific and Technical and the Legal Sub-Committees of scientific and technical critera for the safe use of nuclear power sources in outer space is an essential step towards the establishment of a set of principles on nuclear power sources, it is the opinion of my delegation that the question would have merited further work. With the aim of achieving more precise technical safeguards, my delegation would have insisted on unanswered queries, such as the definition of safe procedures to cope with the problem of possible impact of space objects with nuclear power sources on board against the Earth's solid surface.

(Mr. Perri, Brazil)

As we stated during this year's session of the Scientific and Technical Sub-Committee, Brazil, due to its large land area, is particularly vulnerable to an uncontrolled re-entry and subsequent impact of a space object with a nuclear power source on board. Nevertheless, as a positive contribution to consensus, my delegation did not insist on including that aspect in the recommendation adopted. That does not mean, however, that the question should be left aside. It is my delegation's contention that, owing to the accelerated pace of technological progress, it is a matter of necessity to provide for periodical revisions of the agreed criteria. We would have preferred to establish clearly in principle 3 an agreed procedure for revising its content within a shorter period of time than that established in principle 12.

Brazil favours the continuation of the consideration of the examination of the physical nature and technical attributes of the geostationary orbit in the Scientific and Technical Sub-Committee, since the eventual conclusions may serve as useful subsidies for the work on that item in the Legal Sub-Committee.

My country attributes special importance to the question of space and Earth environments. As an expression of that concern, Brazil took the initiative, during the Special Political Committee sessions at the forty-fourth session of the General Assembly, to propose a special paragraph - paragraph 22 of General Assembly resolution 44/46 - dealing with the effects of space activities on the Earth's environment. The deliberations on the item - henceforth entitled "Progress in national and international space activities related to the Earth environment, in particular progress in the geosphere-biosphere (global change) programme" - should not only be continued at the Sub-Committee's next session, but also broadened so as to include the analysis of the possible consequences of space activities to the Earth's environment.

(Mr. Perri, Brazil)

Among those topics that could be studied by the Scientific and Technical Sub-Committee, we might suggest the following: first, the effect on Earth's atmosphere, especially to the ozone layer, of the increased quantity of solid and liquid fuels burned in a progressively greater number of space vehicles being launched; secondly, the consequences of the increasing number of space objects with nuclear power sources on board, in the light of the recently accepted guidelines for safe use that allow a certain degree of radiological exposure; and thirdly, the study of possible damage to the environment in the case of accidental re-entry into the Earth's atmosphere and impact on solid surfaces of space objects carrying nuclear power sources on board, as well as the possible consequences to the Earth's environment of impacts with space debris of objects in space carrying nuclear power sources on board. We welcome other suggestions and proposals along the same lines by other delegations.

The question of space and Earth environments is also central to the initiative of commemorating the International Space Year in 1992. The remarkable coincidence that my country will be hosting the United Nations Conference on Environment and Development that same year did not go unobserved by the Brazilian authorities. Brazil accepted the responsibility for co-ordinating one of the 10 International Space Year projects included in the programme, "Mission to Planet Earth". We accepted that role in a project to monitor the forest cover of the Earth that is considered to be the first collective assessment of global deforestation ever made. The Brazilian experience of monitoring deforestation in the Amazon rain forest - based on the work of the National Institute of Space Research (INPE) - will be used both to observe areas in tropical and equatorial regions and to address changes in boreal and temperate-zone forests. It is interesting to note, concerning that initiative, that in accordance with the existing data and historical information, the record shown by developed nations in the preservation

(Mr. Perri, Brazil)

of their vegetation is by far poorer than that of the developing countries in Asia, Africa, and Latin America.

A conference is also to be held in Brazil in 1992 to study the findings of that project and to receive suggestions for possible lines of action to deal with the problem. It is important to note the statements made by the Chairman of the Committee and by the Chief of the Outer Space Affairs Division, which acknowledge that those activities, in the scope of the International Space Year, will be complementary to the work of the United Nations Conference on Environment and Development.

This year's session of the Legal Sub-Committee produced useful results. The adoption of a consensus text on principle 3 - "Guidelines and criteria for safe use" - enables us to concentrate our efforts on other substantial issues, such as the questions of the notification of the presence on board a space object of a nuclear power source - principle 2 - and of the need for an appropriate definition of the concept of "launching States", with a view to establishing the responsibilities for conducting safety assessments - principle 4 of the Canadian working paper.

Brazil considers of fundamental importance the concept of prior notification in the launching of space vehicles with nuclear power sources on board, particularly to those countries that are in the vicinity of launching sites. We must recognize that those countries could be affected by the radiological effects of a possible accident during or in the first stages after launching. Other countries share the same concerns, particularly those whose territories are located near launching facilities. Brazil insists on defending the opinion that the concepts of prior notification and safety assessment are of a different nature and imply distinct consequences, and therefore should not be considered together.

(Mr. Perri, Brazil)

As regards specifically the need for an effective and comprehensive safety assessment, my delegation received with extreme reservation the suggestion made during the session of the Legal Sub-Committee in Geneva that only the States from whose territory space objects with nuclear power sources on board were launched should have the obligation for that safety assessment.

Concerning the questions of the definition of outer space and of the character and utilization of the geostationary orbit, we continue to reaffirm our well-known positions. First, the delimitation of outer space is a legal problem that can only be solved through the elaboration of a legally binding international instrument, for it affects the more important question of the applicability of existing international law to air space and outer space. Thus we welcome the proposal made by some delegations that the Sub-Committee begin in 1991 a preliminary exchange of views on the legal aspects related to future flights of aerospace transportation systems. Secondly, there is a need to define a special legal régime for the geostationary orbit in order to regulate its rational use and equitable utilization without prejudice to the role of the International Telecommunication Union.

We acknowledge the efforts made by the Working Group on that subject, particularly by its Chairman, Mr. Stanislao Zawels of Argentina, to stimulate a frank exchange of views and to streamline a solution for both questions.

In relation to the new item of the Legal Sub-Committee, it is with pleasure that my delegation welcomes the election of Mr. Raimundo González of Chile to chair the Working Group established to consider the legal aspects related to the application of the principle that the exploration and utilization of outer space should be carried out for the benefit and in the interests of all States, taking into particular account the needs of developing countries. His skills and competence will certainly contribute to a successful outcome of our work.

(Mr. Perri, Brazil)

We understand that the mandate of the Working Group includes a complete and detailed examination of the information provided by States on national legal frameworks, as well as of all relevant international instruments dealing with the question of international co-operation. For the fulfilment of its mandate, the Working Group should consider treaties, conventions, agreements, principles, declarations, resolutions or programmes related to international co-operation. We recall in that regard the suggestion made by some delegations that the Declaration on the Establishment of a New International Economic Order (resolution 3201 (S-VI)); the Programme of Action on the Establishment of a New International Economic Order (resolution 3202 (S-VI)) - both adopted by the General Assembly on 1 May 1974 - the Charter of Economic Rights and Duties of States (resolution 3281 (XXIX)), adopted by the General Assembly on 12 December 1974; and resolution 3362 (S-VII) on development and international economic co-operation, adopted by the General Assembly on 16 September 1975, also be considered in that review. From all the aforementioned documents, the Committee is to extract the underpinning concepts that will constitute the elements for the development of a set of legal principles dealing with international co-operation in space exploration and use.

Mr. MOUNKHOU (Mongolia): The Mongolian delegation wishes to express its deep satisfaction at seeing our Chairman again guiding the work of our Committee at this session. Given his vast experience in, and deep knowledge of, the subject matters before the Committee and the past record of his contributions, we are confident that the Committee at its current session will successfully complete its work under his able leadership.

Our appreciation and gratitude also go to the Chairmen of the two Sub-Committees, their Working Groups and all the members of the Secretariat for their work well done during the last sessions of the Sub-Committees.

My delegation extends its felicitations to the delegations of the Soviet Union, the United States, China, Japan, the European Space Agency countries and other States which have scored new outstanding achievements in the peaceful exploration and uses of outer space and in promoting co-operation in this very important realm. We believe the international community will be able to benefit from their achievements.

Commendable results have been attained during the last sessions of both the Scientific and Technical Sub-Committee and the Legal Sub-Committee. They reflect the prevailing favourable and helpful atmosphere in international relations and the increasingly constructive attitude of Member States towards the issues handled by the Sub-Committees.

The Mongolian delegation is especially pleased that a set of recommendations concerning the safe use of nuclear power sources has been agreed upon.

We note with satisfaction that the Legal Sub-Committee has at long last established a new Working Group and has the prospect of beginning substantive consideration of the item on the legal aspects related to the application of the principle that the exploration and utilization of outer space should be carried out for the benefit and in the interests of all States, taking into particular account

(Mr. Mounkhou, Mongolia)

the needs of developing countries. The deliberations in the Sub-Committee on this item, we believe, have brought home with special emphasis the increasing need to establish an international framework to give easy access by the developing countries to relevant space scientific information and technological achievements so that they may benefit in developing their appropriate indigenous capabilities in this field, which is vital for them. My delegation is of the view that the ideas and proposals contained in the communications submitted by Chile, Cuba, Indonesia, Mexico and Pakistan in accordance with paragraph 90 of the report of this Committee to the forty-third session of the General Assembly could constitute a good basis for considering the item in a way that would take into account the acute needs of the developing countries and would be beneficial to all.

One issue that deserves our special attention is how to enhance the United Nations Space Applications Programme so that the international community may observe International Space Year, in 1992, with concrete results beneficial to all of us, especially the developing countries. This is all the more important because of the role these activities play in advancing the implementation of the recommendations of the Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE 82), whose tenth anniversary will be commemorated in the same year. We would think that the Committee would do right to devote the lion's share of its 1991 session to deliberations on ways and means to achieve those goals.

The specific studies to be carried out in accordance with paragraph 5 (b) of the report of the Working Group of the Whole on the implementation of UNISPACE 82 to the twenty-seventh session of the Scientific and Technical Sub-Committee could be most useful if they were to contain space application information of practical relevance to development needs, especially of the developing countries.

(Mr. Mounkhou, Mongolia)

We urge the United Nations to do its utmost to have established by International Space Year 1992 the international space information service and regional training centres which were recommended by the General Assembly in resolution 44/46.

Mongolia is keenly interested in participating in, and benefiting from, all major activities to be undertaken within the framework of International Space Year.

Maintaining outer space for peaceful purposes remains an important task of the Committee, which has elaborated a number of international instruments on outer space matters and put in them important guiding principles, including the one on its peaceful exploration and uses. The last session of the General Assembly requested the Committee to consider, as a matter of priority, ways and means of maintaining outer space for peaceful purposes. We earnestly hope that the emerging prospect of better relations and broader co-operation between States - in particular, the results of the recent Washington meeting of the leaders of the Soviet Union and the United States - will help create increasingly favourable conditions for the international community to stem the use of outer space for military purposes and prevent an arms race there.

Due to its extremely limited indigenous technological basis and financial resources, Mongolia relies for its space applications efforts on the assistance and co-operation of other States and organizations which have space-related capacities. We are lucky to have two important space Powers - the Soviet Union and the People's Republic of China - as our immediate neighbours, and expect to benefit from co-operation with them. Indeed, we discern good prospects of developing co-operation with them in this field.

Mongolia's recent activities in space applications have included a number of ecological, geological and meteorological research programmes carried out in multilateral and bilateral co-operation, mostly within the framework of INTERCOSMOS.

(Mr. Mounkhou, Mongolia)

High priority is being given to the implementation of a project to produce ecological maps of the Mongolian environment. The project will also help elaborate a methodology to evaluate the state of the Mongolian environmental and biological resources.

The Government of my country attaches particular importance to creating in the near future technical conditions to make it possible for all rural areas to receive national television broadcasting and use wireless telephone communication, with the help of space technology. Since Mongolia is a vast country with a scattered population, this is a challenging and yet indispensable task. We pin great hopes on the possible benefits to be derived from the ASIASAT system. Measures are now being taken so that this project may be implemented by 1995.

In conclusion, my delegation would like to express its sincere appreciation of the fruitful efforts of the Outer Space Affairs Division, which - notwithstanding serious financial handicaps - is carrying out many important projects in the implementation of the United Nations Space Applications Programme and the recommendations of UNISPACE 82. I congratulate Mr. Jasentuliyana and his staff.

(Mr. Mounkhou, Mongolia)

Mongolia wants to continue to benefit from the important work done by the Division. We sincerely hope that the positive changes in international relations and the spirit of growing co-operative efforts will help broaden the capacities of the Division and other United Nations agencies with space-related activities to assist the countries which greatly need to make increasing utilization of the spin-off effects of space science and technology in their socio-economic development.

The meeting rose at 1.00 p.m.